HU-25C Guardian 09/23/15

Aircraft:
HU-25A Guardian #525 (See full schedule)
Flight Number:
OIB2015 Arctic North Central Gap 02
Payload Configuration:
ATM & DMS
Nav Data Collected:
No
Total Flight Time:
3.9 hours
Submitted by:
Luci Crittenden on 09/23/15
Flight Segments:

From:	BGTL	**To:**	BGTL
Start:	09/23/15 11:43 Z	**Finish:**	09/23/15 15:39 Z
Flight Time:	3.9 hours		
Log Number:	15F005	**PI:**	John Woods
Funding Source:	Thomas Wagner - NASA - SMD - ESD Cryosphere & International Polar Year		
Purpose of Flight:	Science		
Comments:	The HU-25 completed its first OIB Arctic science data mission out of Thule, Greenland today. Aircraft and science instruments performed well. Next data flight scheduled for Thursday, September 23.		

Flight Hour Summary:

	15F005	16F002
Flight Hours Approved in SOFRS	100	
Flight Hours Previously Approved		67.4
Total Used	32.6	65.3
Total Remaining		2.1

16F002 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining
10/05/15	OIB2015 Arctic Sea Ice Central	Science	3.6	3.6	63.8
10/05/15	OIB2015 Arctic Sea Ice East	Science	3.8	7.4	60
10/06/15	OIB2015 Arctic Ice-Sat2 North	Science	4	11.4	56
10/07/15	OIB2015 Arctic Transit Thule to Kangerlussuaq	Transit	2	13.4	54
10/08/15	OIB2015 Arctic Southwest Coastal A	Science	3.8	17.2	50.2
10/08/15	OIB2015 Arctic Thomas-Jakobshavn 01	Science	3.7	20.9	46.5
10/09/15	OIB2015 Arctic Umanaq B	Science	3.9	24.8	42.6
10/13/15	OIB2015 Arctic Jakobshavn Eqip Store	Science	2.9	27.7	39.7
10/13/15	OIB2015 Arctic Southeast Coastal A	Science	3.6	31.3	36.1
10/18/15	OIB2015 Arctic Southeast Coastal B	Science	4.1	35.4	32
10/19/15	OIB2015 Arctic Helheim-Kangerdlugussuaq	Science	3.7	39.1	28.3
10/19/15	OIB2015 Arctic Helheim-Kangerdlugussuaq Gap B	Science	3.9	43	24.4
10/20/15	OIB2015 Arctic Jakobshavn Mop-Up	Science	3.7	46.7	20.7

10/20/15	OIB2015 Arctic Southwest Coastal B	Science	3.7	50.4	17
10/21/15	OIB2015 Arctic Southwest Coastal C	Science	3.4	53.8	13.6
10/21/15	OIB2015 Arctic K-EGIG-Summit	Science	3.7	57.5	9.9
10/22/15	OIB2015 Arctic Mopup South	Science	2	59.5	7.9
10/22/15	OIB2015 Arctic Ferry BGSF-CYYR	Ferry	2.2	61.7	5.7
10/23/15	OIB2015 Arctic Ferry CYYR-KRIC	Ferry	3.3	65	2.4
10/23/15	OIB2015 Arctic Ferry CYYR-KRIC	Ferry	0.3	65.3	2.1

Source URL: https://airbornescience.nasa.gov/flight_reports/HU-25C_Guardian_09_23_15

Related Science Report:

OIB - HU-25C Guardian 09/23/15 Science Report

Mission:
OIB
Mission Summary:

Mission: North Central Gap 02 (priority: medium)

This mission is a modified version of the Spring 2015 mission of the same name. Its purpose is to capture the seasonal melt signal over central Greenland, and track that signal from low elevations on the Baffin Bay coast as far across the ice sheet as range allows, in this case across the ice divide and partway down the east side. We shortened the spring 2015 flight by removing the easternmost portions of the lines, and we also remove a coast-parallel transit line on the west plus a centerline of Rink Glacier, replacing them with direct transits.

Weather today was dominated by a strong high pressure system over north central Greenland, with weaker lows to the west and north of Thule. The weak low to the north created clouds which obscured our sea ice targets in the Lincoln Sea and westward, at low and medium altitudes. The strong high itself created an on-shore wind south and east of Thule, which in turn created a widespread area of ground fog from the orographic effect of the steeply rising terrain along the Melville Bay coast. These conditions left the medium-priority North-Central Gap

02 flight as the only candidate mission with almost completely clear skies. We encountered a medium-altitude stratus cloud near the southeastern corner of the survey which obscured all three science instruments for approximately five minutes or less, while the remainder of the science line was completely clear.

This was our first science mission with the Falcon aircraft, and among the first science missions flown with the ATM operating exclusively at high altitude. As a result we took a conservative approach with altitude, starting the survey at 25,000' MSL and climbing to 30,000' MSL as topography of Greenland's west coast rose as we proceeded inland. This resulted in sensor altitudes above the ground which hovered around 20,000' for the vast majority of the science line. ATM operated well under those conditions, as did DMS. Evaluation of the infrared camera imagery is ongoing, but appeared to be at least reasonable in real-time. The lower altitudes, however, also negatively impacted the Falcon's true airspeed, and hence the range (the aircraft performs best at approximately 35,000' MSL). This forced us to remove the easternmost 150 km of the two data lines.

We did not see a recurrence of the fouling of the nadir window, which we saw previously on the Langley-based test flight. Mitigation measures taken by the Langley maintenance team may have solved that problem.

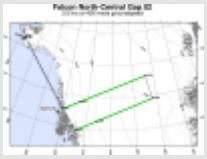
We conducted a ramp pass at 10,000' AGL.

Data volumes:
DMS: 11.3 Gb
Narrow Swath ATM: 10 Gb
FLIR: 1 Gb

total data collection time: 1.7 hrs

Images:

Map of Falcon - North-Central Gap 02



Read more

Small glaciers along Greenland's Melville Bay coast

Read more

Submitted by:
John Sonntag on 09/23/15

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

15F005 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining
09/15/15	OIB #1	Check	2.7	2.7	97.3
09/20/15	OIB #2, 3, 4	Ferry	2.7	5.4	94.6
09/21/15	OIB #2, 3, 4	Ferry	2.3	7.7	92.3
09/21/15	OIB #2, 3, 4	Ferry	2	9.7	90.3
09/23/15	OIB2015 Arctic North Central Gap 02	Science	3.9	13.6	86.4

09/24/15	OIB2015 Arctic Northwest Coastal A	Science	3.7	17.3	82.7
09/25/15	OIB2015 Arctic Northwest Coastal B	Science	3.8	21.1	78.9
09/28/15	OIB2015 Arctic Sea Ice West	Science	3.7	24.8	75.2
09/30/15	OIB2015 Arctic North Central Gap 01	Science	3.9	28.7	71.3
09/30/15	OIB2015 Arctic Zachariae-79N	Science	3.9	32.6	67.4